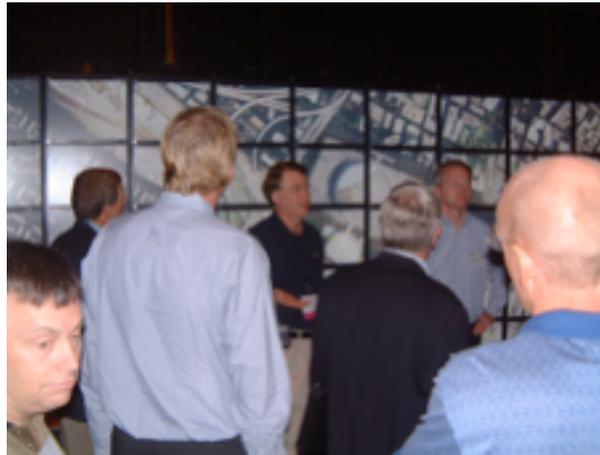


# iGrid 2005 Workshop, 26-29Sep05, UCSD/CalIT2

Accelerating the Use of Multi-10Gigabit per Second International and National Networks: [www.igrid2005.org](http://www.igrid2005.org)



Host Larry Smarr (UCSD/CalIT2) and Co-Chairs Tom DeFanti and Maxine Brown (UIC) give welcoming remarks at opening reception of the iGrid 2005 Workshop which drew ~450 attendees.



Larry Smarr (center left) notes that the 11x5-tile "100M" (actually 17,600x6,000) pixel display behind him in the Cave room is only one of several other remarkable display/networking technologies being demonstrated at iGrid 2005.

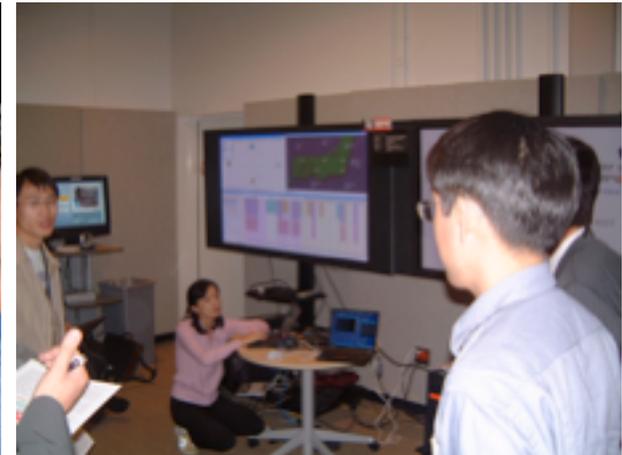


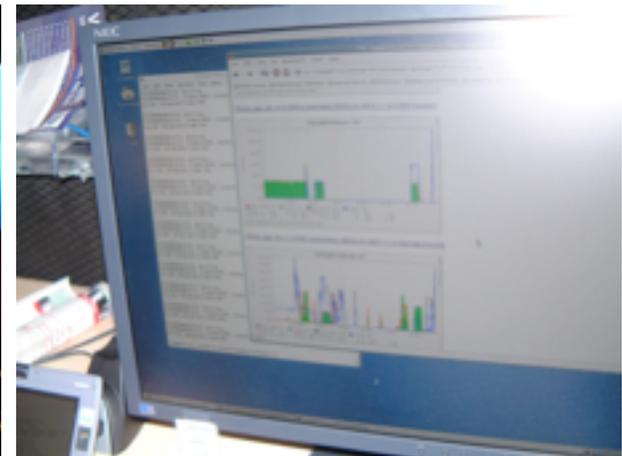
Exhibit JA101/"Coordination of Grid Scheduler and Lambda Path Service Over GMPLS", running on one of the 2-panel displays in the Terascale room, is another example of the advanced real-time applications demonstrated at iGrid 2005.



Attendees in the 250-seat Auditorium (with each seat hosting an electrical power outlet and a 1-GE network connection) participate in iGrid 2005's Symposium sessions with no scheduled breaks.



Gail McConaughy (GSFC)'s presentation on NASA's Hurricane '05 Project, together with follow panelists Mikhail Zhizhin (Russian Academy of Science) (center) and John Orcutt (SIO) during the Earth Science Applications session, is representative of the 20+ keynotes, panels, and master classes presented at iGrid 2005.



MRTG graphs of traffic rates on two 10-Gigabit per second links from Amsterdam illustrate 19.5 Gbps peak and 18 Gbps sustained flows for a single application demonstrated at the iGrid 2005, while 48 other exhibits concurrently used the iGrid 2005's seven 10-Gbps and five 1-Gbps international and national network connections.

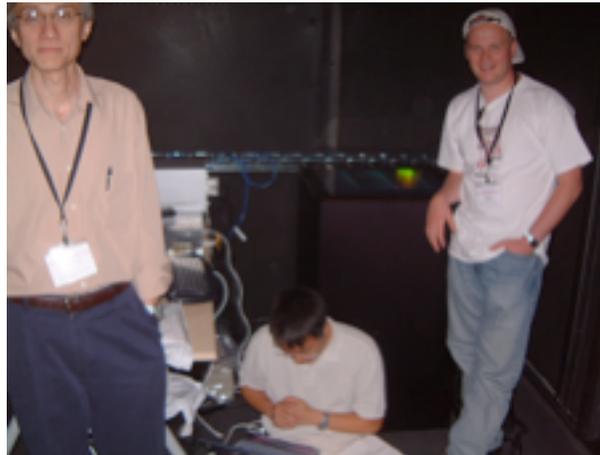
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## US130: Real-Time True-3D/HDTV (No Goggles) Visualization Over the National LambdaRail

NASA and Physical Optics Corporation demonstrate a holographic 3D HDTV video display system that does not require goggles or other special head gear, using a live cross-country video feed from NASA Goddard Space Flight Center to the iGrid 2005 site in San Diego. POC is a NASA SBIR Phase 1 awardee, and worked with NASA GSFC on this project.

[www.poc.com/emerging\\_products/3d\\_display/default.asp](http://www.poc.com/emerging_products/3d_display/default.asp)



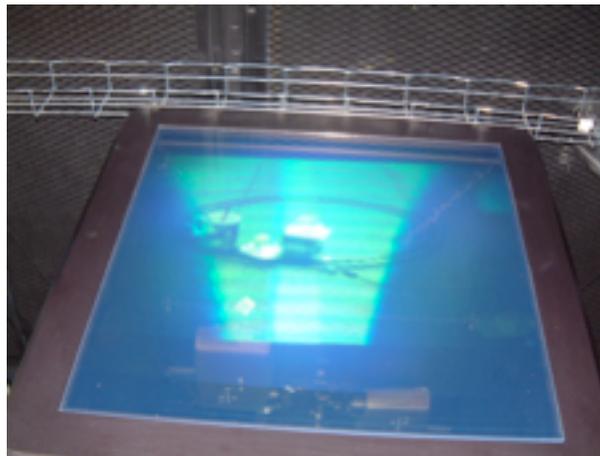
GSFC's Ben Kobler (left) and POC's Sookwang Ro and Kirill Kolesnikov (right) work to set up POC's holographic 3D HDTV video display system (center) prior to the start of iGrid 2005.



During off-net periods, stored stereo-HDTV graphics such as the PC-displayed engine model are transmitted in local mode.



Ro, Kobler, and Kolesnikov view the 35" x 35" 3-D holographic display screen while other US130Exhibit team members located at GSFC in Greenbelt, MD, adjust the two stereoscopically-aligned HDTV cameras aimed at the viewed target.



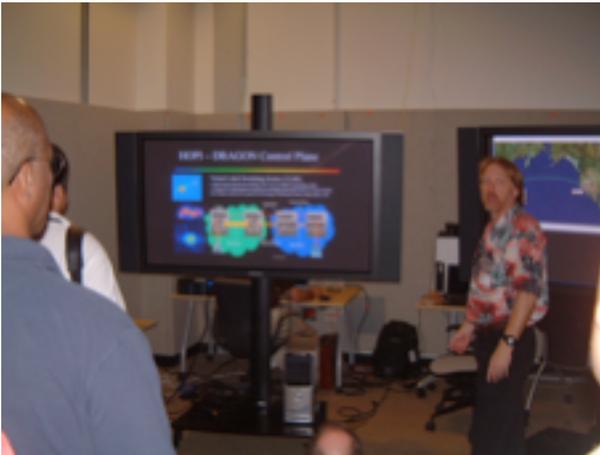
Only a non-stereo image of the True-3D display is captured in this photo of the real-time stereo-HDTV images transmitted from GSFC.



Ben Kobler views the True-3D display during a quiet moment.

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UMCP/DRAGON's Jerry Sobieski describes the dynamic provisioning across multiple administrative domains used to enable this demo of Very Long Baseline Interferometry (VLBI) e-Science.



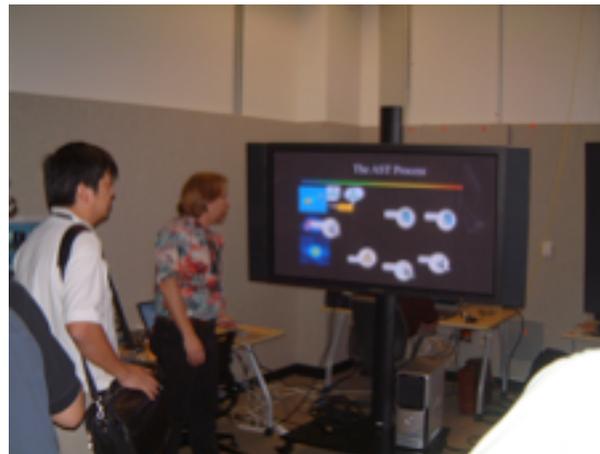
MIT/Haystack's Chet Ruszczyk calls attention to the "fringe" being generated in real-time from correlations of data obtained from multiple VLBI antennas around the world used during this demo.



Chet Ruszczyk further explaining VLBI's correlation process.



Several workshop attendees listen attentively as Jerry Sobieski further describes the network connections enabled for this demo.



Jerry Sobieski presents the DRAGON-developed concepts of Application Specific Topologies applicable to this demo.



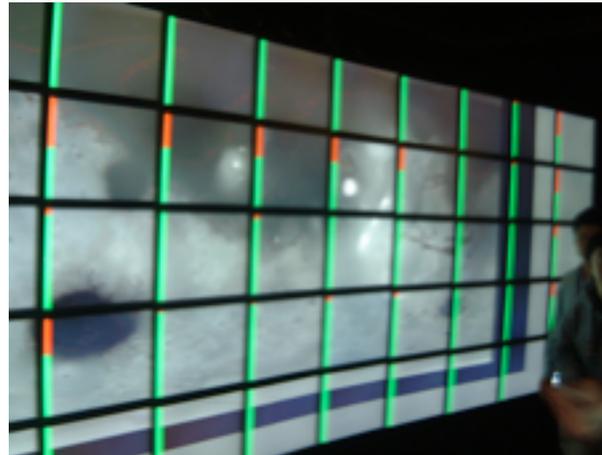
Map showing network topology linking Sweden, the Netherlands, the U.K., the U.S., and Japan for this demo.

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iGrid 2005's 11x5-tile 100M pixel display is used for real-time scrolling through 2.5G (78,797x31,565) pixel image of Delft, while the data is located and rendered at SARA, Amsterdam.



NASA's Mars Orbiter Laser Altimeter data, located and rendered at SARA, is streamed to the 100M pixel display via an application developed by Bram Stolk (SARA) (right). Orange levels per tile indicate amount of new real-time-scrolled pixels that will be refreshed by the application's continuously streaming protocol.



Even Pat Gary (GSFC)'s amateur photographing of the 100M pixel display is displayed on the display.



View of various other exhibit equipment in the Cave room with the 100M pixel display (not shown) helps portray the breadth of the advanced technology demonstrated at iGrid 2005.



Many 1-10 GE switches "behind the scenes" provide LAN connectivity for the iGrid 2005.



Back side of 100M pixel display showing 5x6 array of PC's each (except one per stack) driving two tiles of the display.

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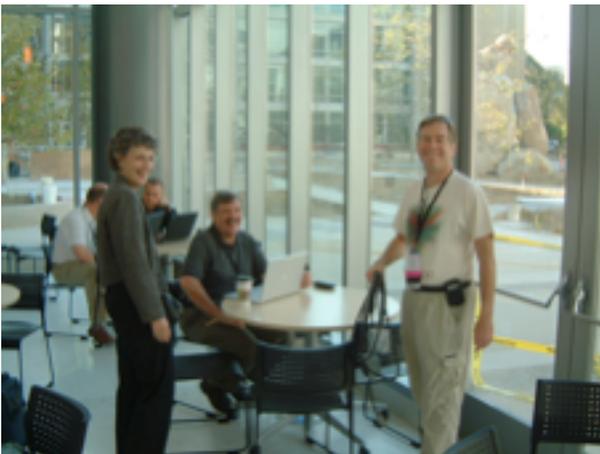
iGrid 2005 entrance, since the front entrance of CalIT2's new building was off limits due to on-going construction.



iGrid 2005 delivers and proceeds on schedule in spite of on-going construction at the front entrance of CalIT2's new building.



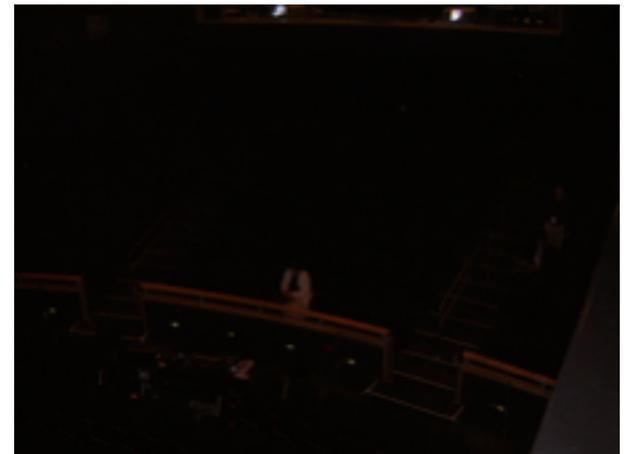
While bobcats and "bears" (stone sculpture) lurk outside the front of CalIT2's new building, iGrid 2005 attendees safely enjoy CalIT2's hospitality.



Tom DeFanti (UIC) (right) is still putting in wiring while Maxine Brown (UIC) and John Orcutt (SIO) enjoy the moment.



Comparable to the intensity levels elsewhere within iGrid 2005, the Hacker room also is heavily utilized.



Yet a lone attendee (GSFC's Gail McConaughy) in the Auditorium before iGrid 2005 starts also can gather her thoughts and wirelessly email before giving her presentation later that day.